

# Creating a Better Human Environment through Green Retrofit

A New Urbanist Perspective

October 19, 2005  
Milwaukee, WI



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## Designing Sustainable Human Environments



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# Overview

Introduction: Balancing Priorities

Organizing the Built Environment

Key Themes

1. Restore & Enhance Natural Hydrology
2. Enhance Mobility & Connections
3. Create Vibrant, Walkable, & Diverse Neighborhoods
4. Build Green Buildings



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# Balancing Priorities

## New Urbanism:

development is walkable and human-scale

but some green design elements are difficult to incorporate



## Green Design:

greatest variety of options in less dense areas

but dependence on the auto is increased



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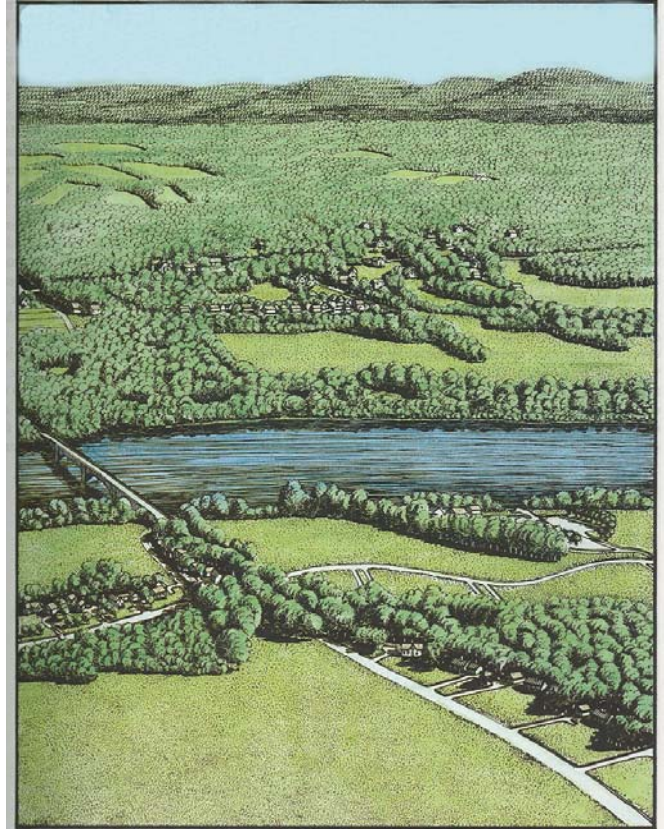
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# Challenges to New Urbanism *and* Green Design

- Conventional codes & “standard” practices
- Complexity of project
- Current development practices

Plus, some goals may conflict between the two.



Conservation subdivision  
from Rural By Design  
by Randall Arendt



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# Smart Growth Themes & Principles

## 1. DEVELOP IN THE RIGHT PLACE

- Preserve open space and critical environmental areas
- Strengthen & focus development in existing communities

## 2. BUILD WALKABLE PLACES

- Create walkable neighborhoods with access to services & amenities
- Foster distinctive, attractive communities with a strong sense of place
- Take advantage of compact building design

## 3. ENHANCE FAMILY CHOICES

- Create range of housing opportunities & choices
- Provide a variety of transportation choices
- Mix land uses with compact, pedestrian-friendly areas for shopping and convenience services

## 4. CONDUCT AN OPEN AND FAIR APPROVAL PROCESS

- Facilitate & encourage informed stakeholder collaboration & planning
- Make it easy for developers to do the right thing



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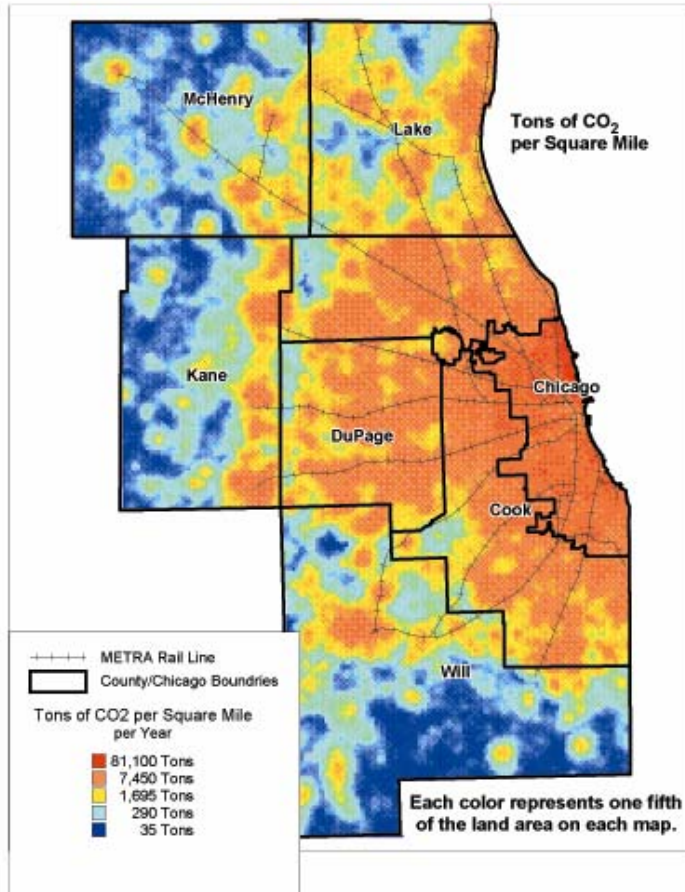
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Source: Smart Growth Network

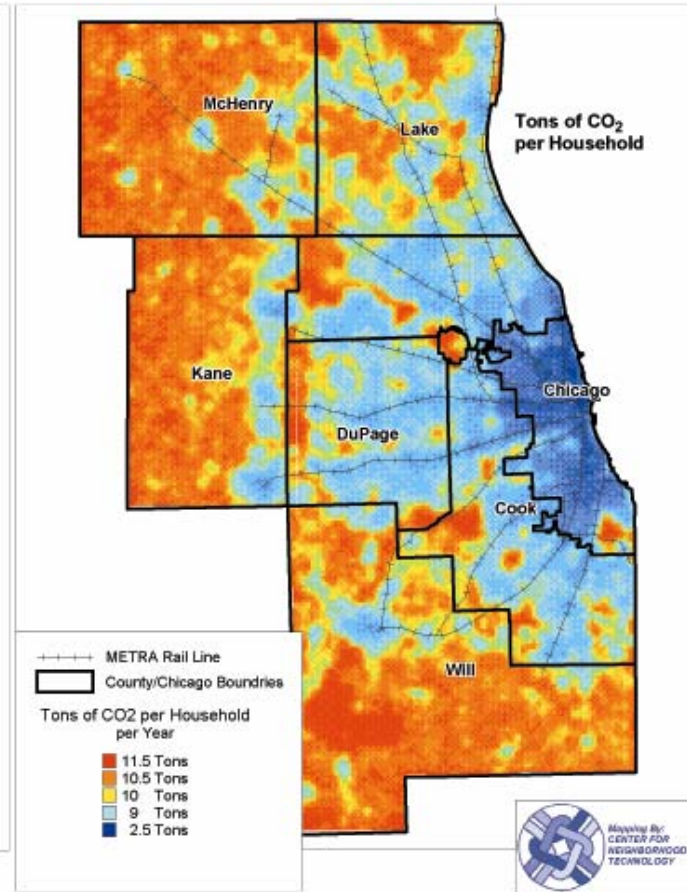
## Two Views of Cities and CO<sub>2</sub>

CO<sub>2</sub> Generated by Automobiles in the Chicago Region per Year

**Traditional View:**  
Cities produce large amounts of GHGs.



**Emerging View:**  
City dwellers produce relatively low amounts of GHGs.



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# Green Urbanist Priorities

In LEED-ND terms:

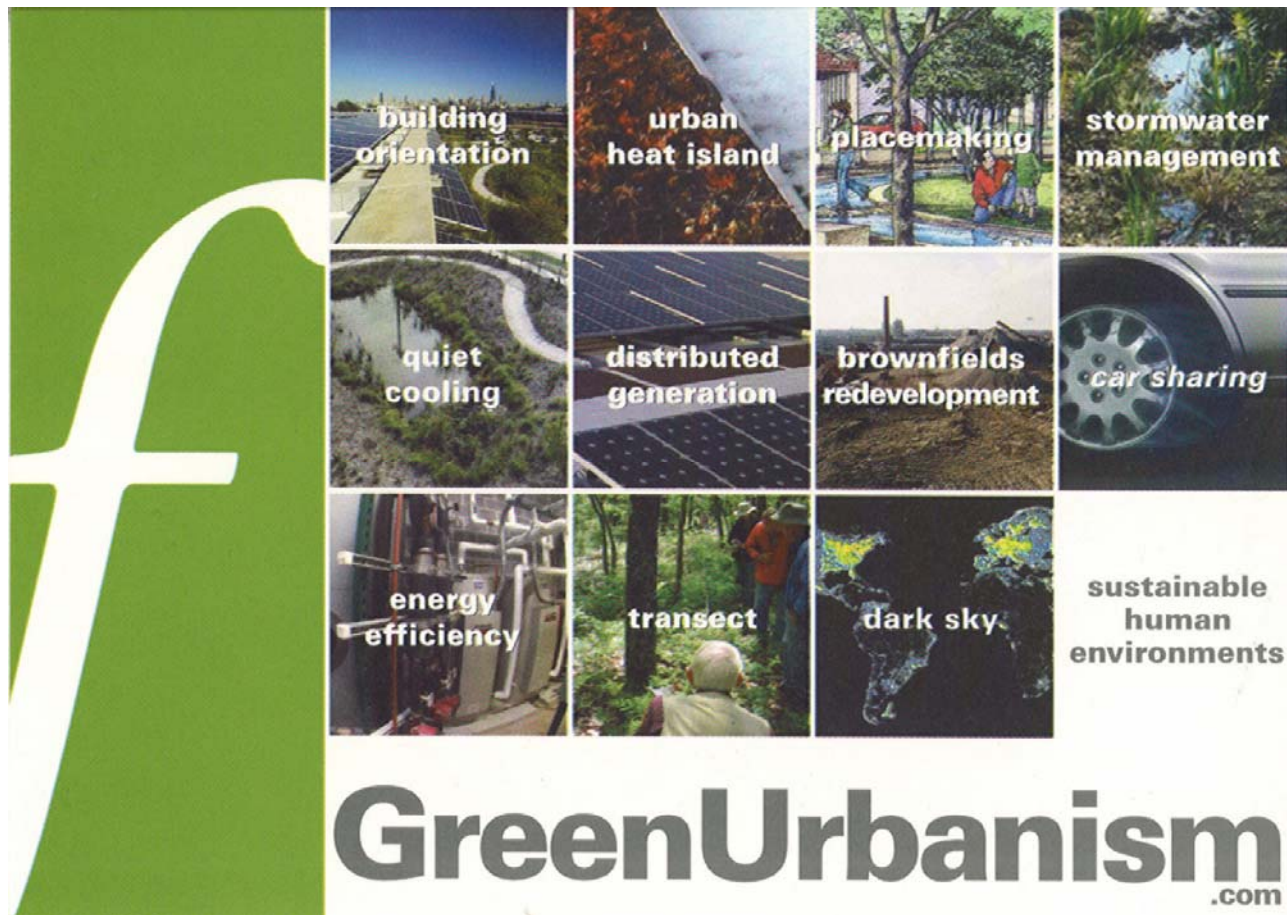
- Location Efficiency
- Environmental Preservation
- Compact, Complete & Connected Neighborhoods
- Resource Efficiency



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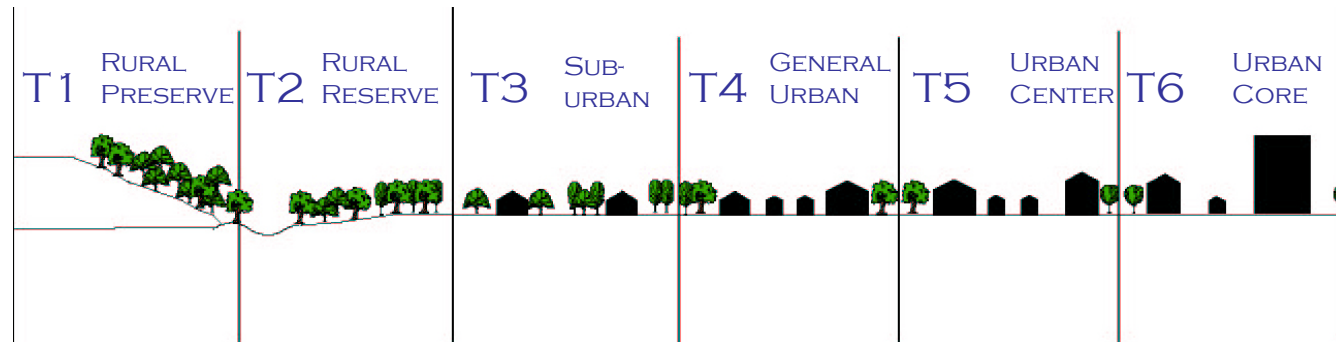
# Organizing the Built Environment



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# Classifying human environments with a Transect



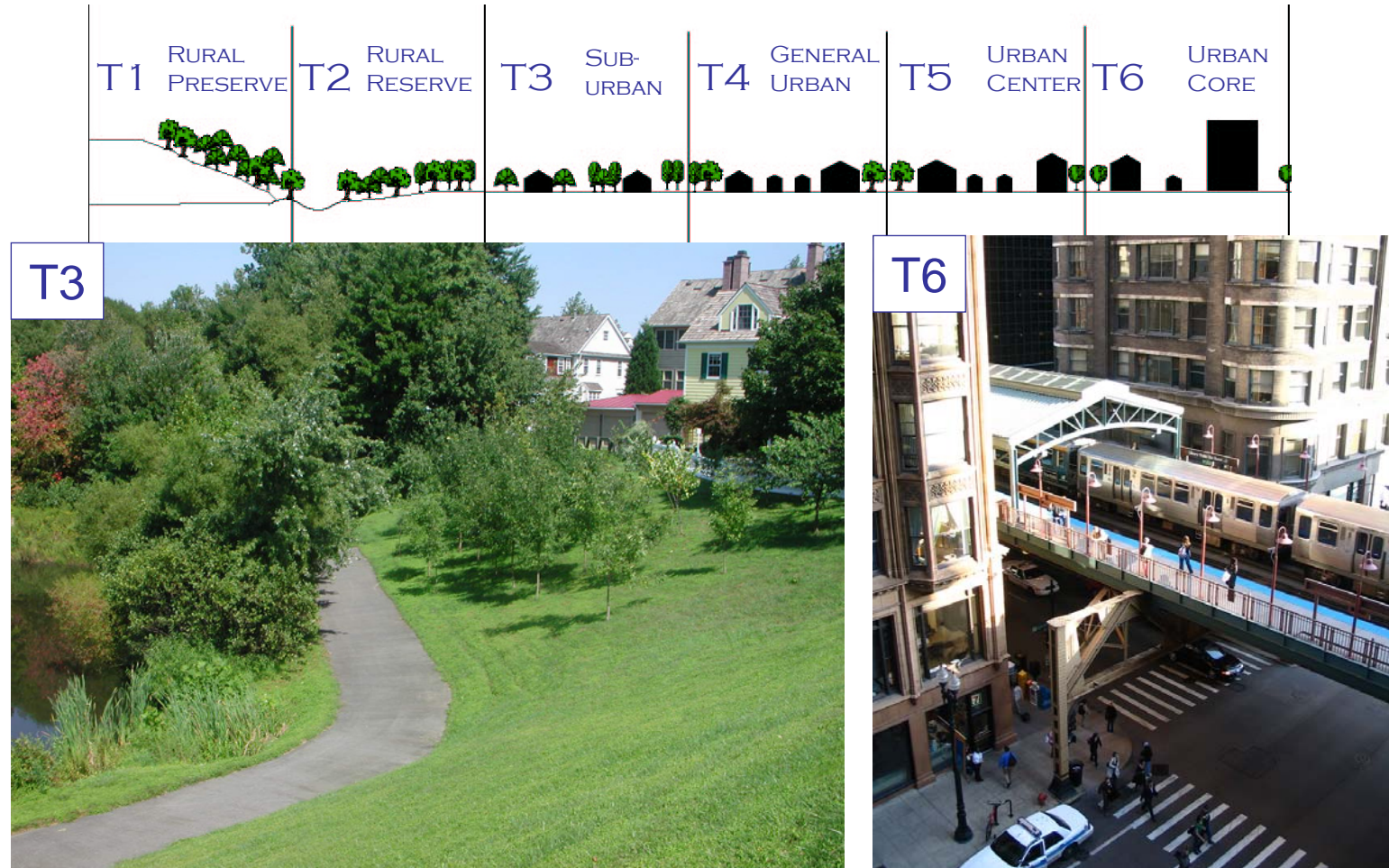
← range of features →

less dense  
mostly residential  
uses  
more landscape  
deep setbacks  
open swales  
informal tree clusters

more dense  
mostly mixed uses  
more hardscape  
shallow setbacks  
raised curbs  
street trees in wells

Note: Per capita impacts decrease as density increases

# Classifying human environments with a Transect



Note: Per capita impacts decrease as density increases



# Theme #1: Restore & Enhance Natural Hydrology



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# Case Study: Toledo, OH

Strength: Great Lakes location



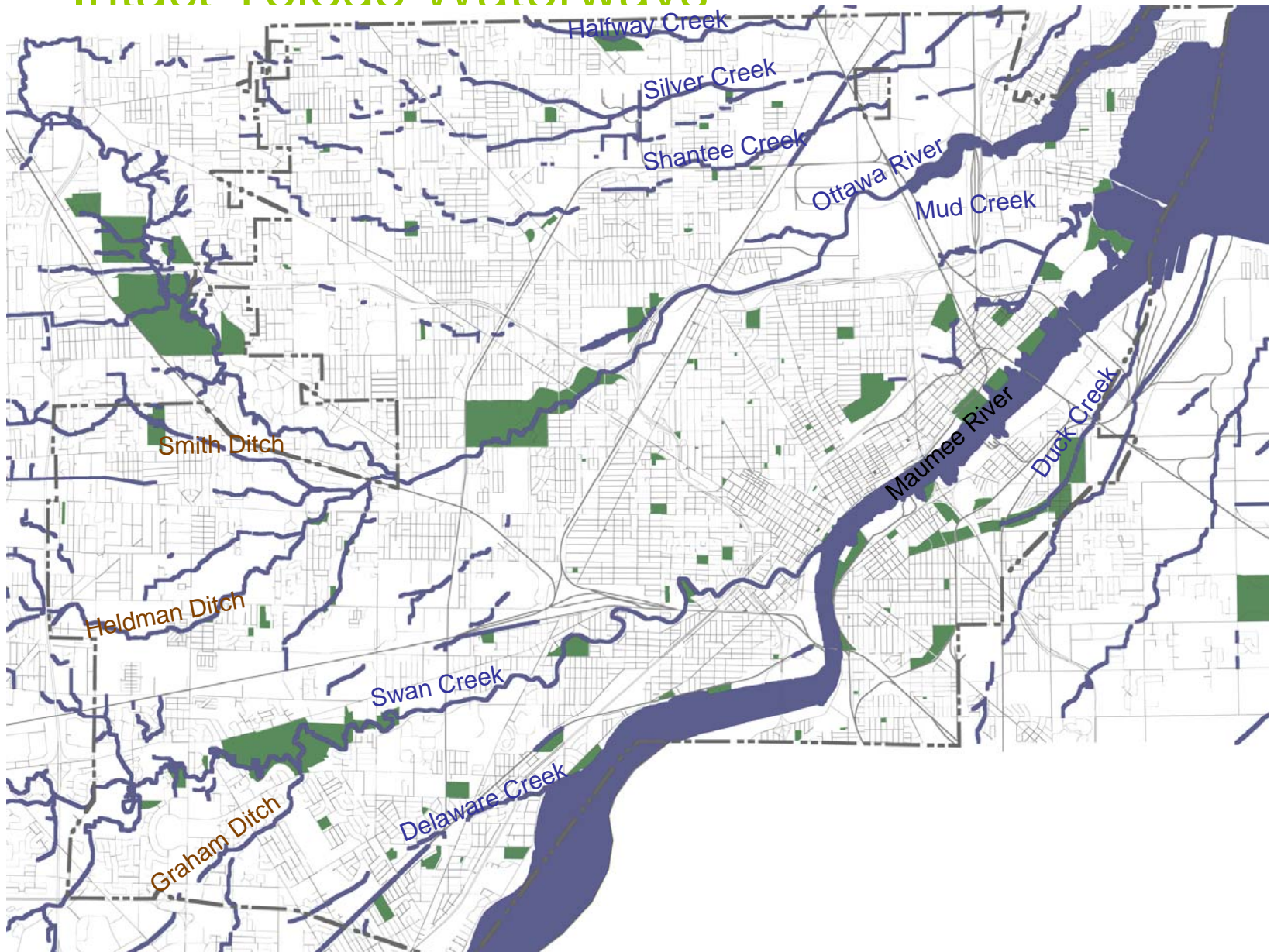
Opportunity:  
Help improve Great Lakes H<sub>2</sub>O quality



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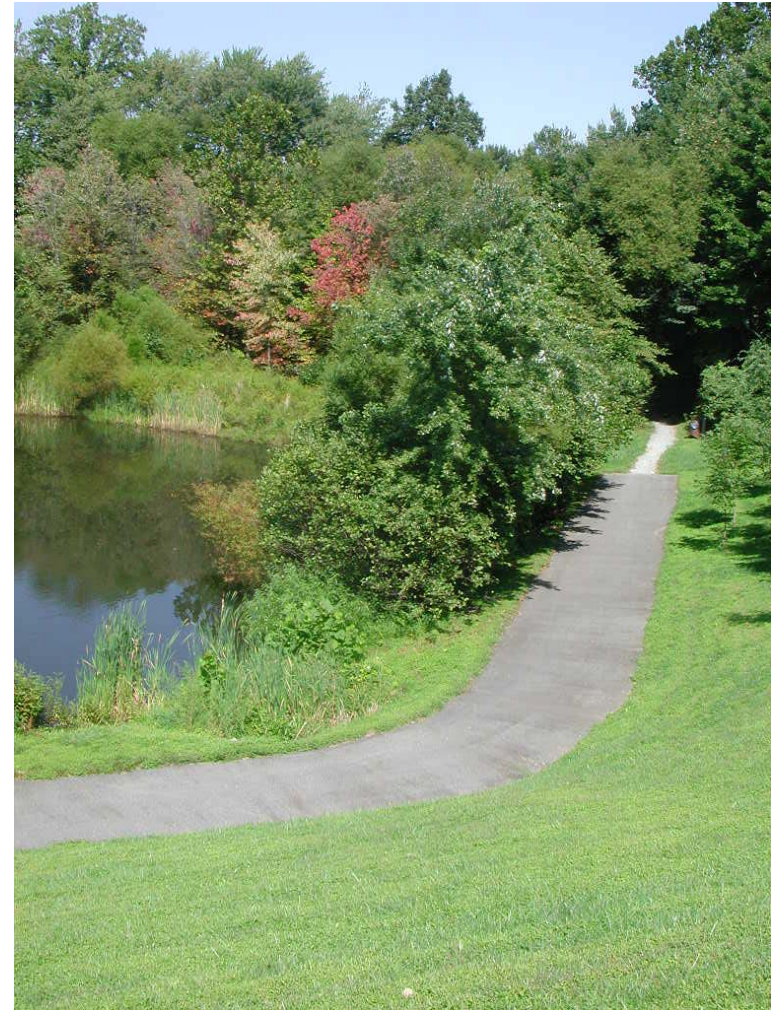
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# Strength: Intact Toledo Waterways





# Engineered versus natural treatments



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# Natural stormwater treatment options (in infill sites)



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# Duneland Village HOPE VI

## Miller Beach Community, Gary, IN



17 DU/Net Acre, 200-year storm event on site

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# Duneland Village HOPE VI

## Block-Scale Rain Gardens



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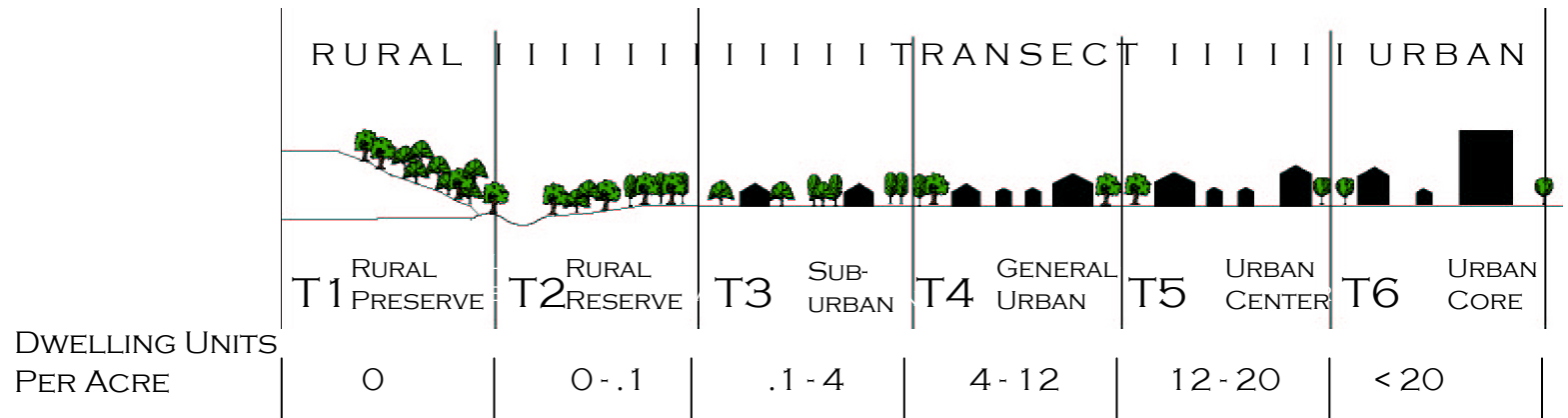


## Theme #2: Enhance Mobility & Connections

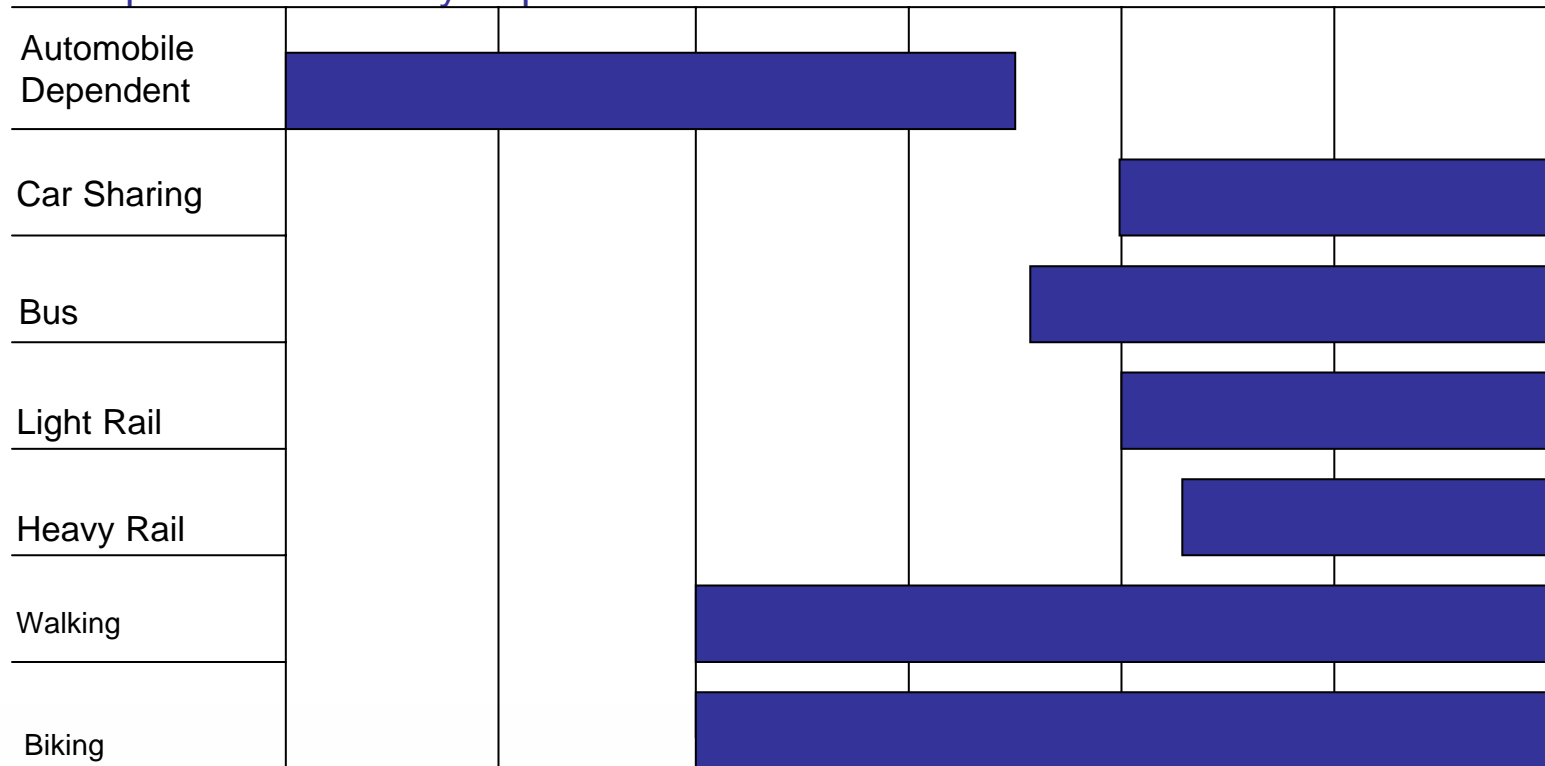


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## Transportation for Daily Trips



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# Transit-Oriented Development (TOD)

Development of land around a transit station with pedestrian-oriented design



Damen El (O'Hare Branch)  
Chicago, IL



Evanston, IL



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# Strategic parking location



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# Car Sharing



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# Bicycle-Friendly Communities



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# Theme #3:

## Create Vibrant, Walkable, and Diverse Neighborhoods



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# Pedestrian-Friendly Communities



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# Key Neighborhood Services within walking distance

- Convenience food store
- Family restaurant
- Coffee shop
- Cleaners/laundry
- Daycare center
- Elementary school
- Places of worship
- Government services
- Park
- Transit station
- Shared cars



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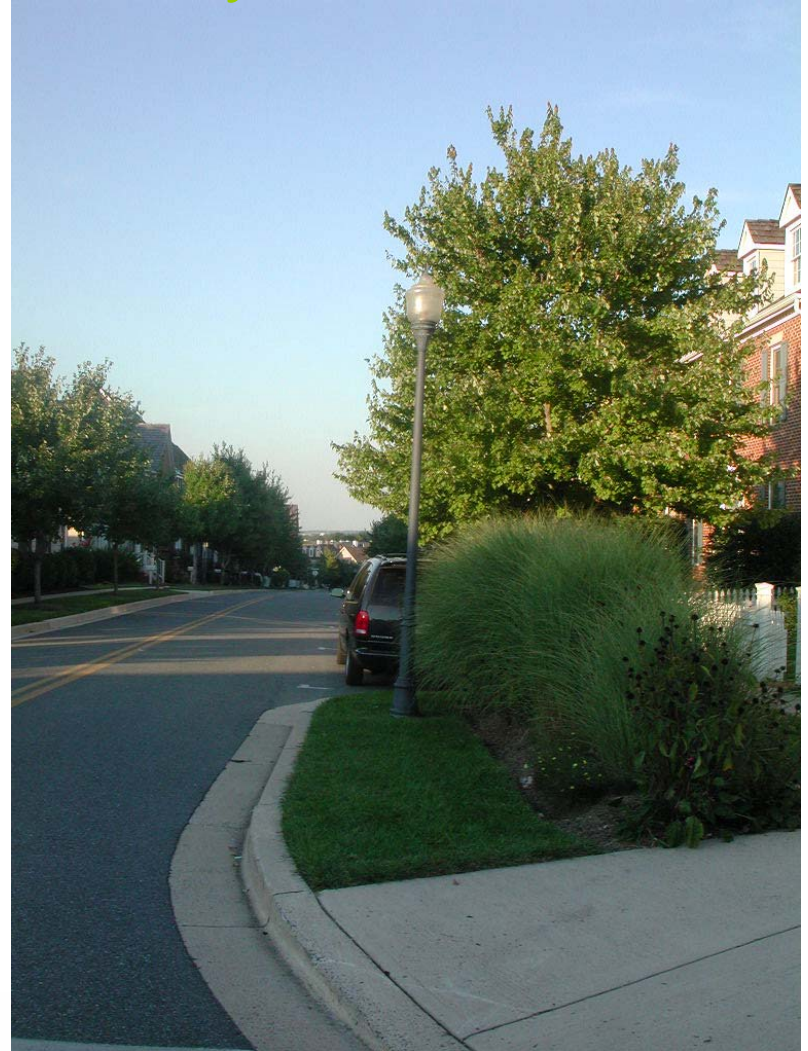
# Skinny Streets



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# Landscaped Medians & Parkways



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# Reduced Development Footprint



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# Build Green Buildings



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...particularly in urban areas



...and especially for

- renovations
- greyfields
- brownfields



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# The Chicago Standard

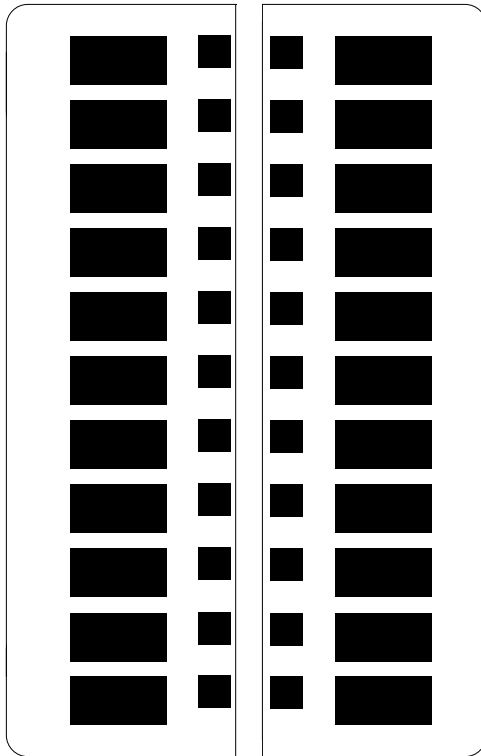
- Required for construction/renovation of City facilities
- Guide to LEED Certification for urban infill



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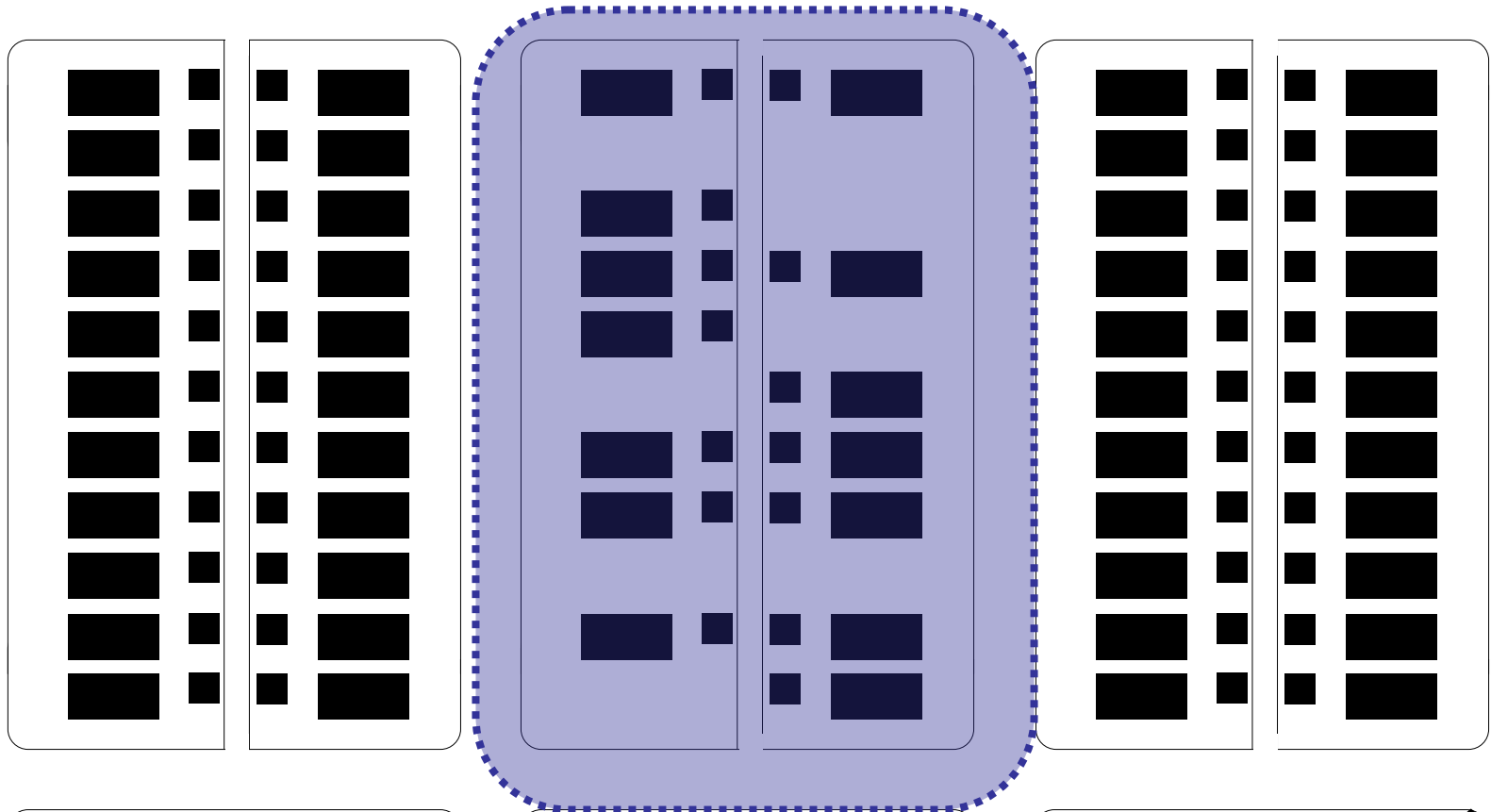
# Challenge: Building Orientation for Infill Situations



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# Challenge: Building Orientation for Infill Situations

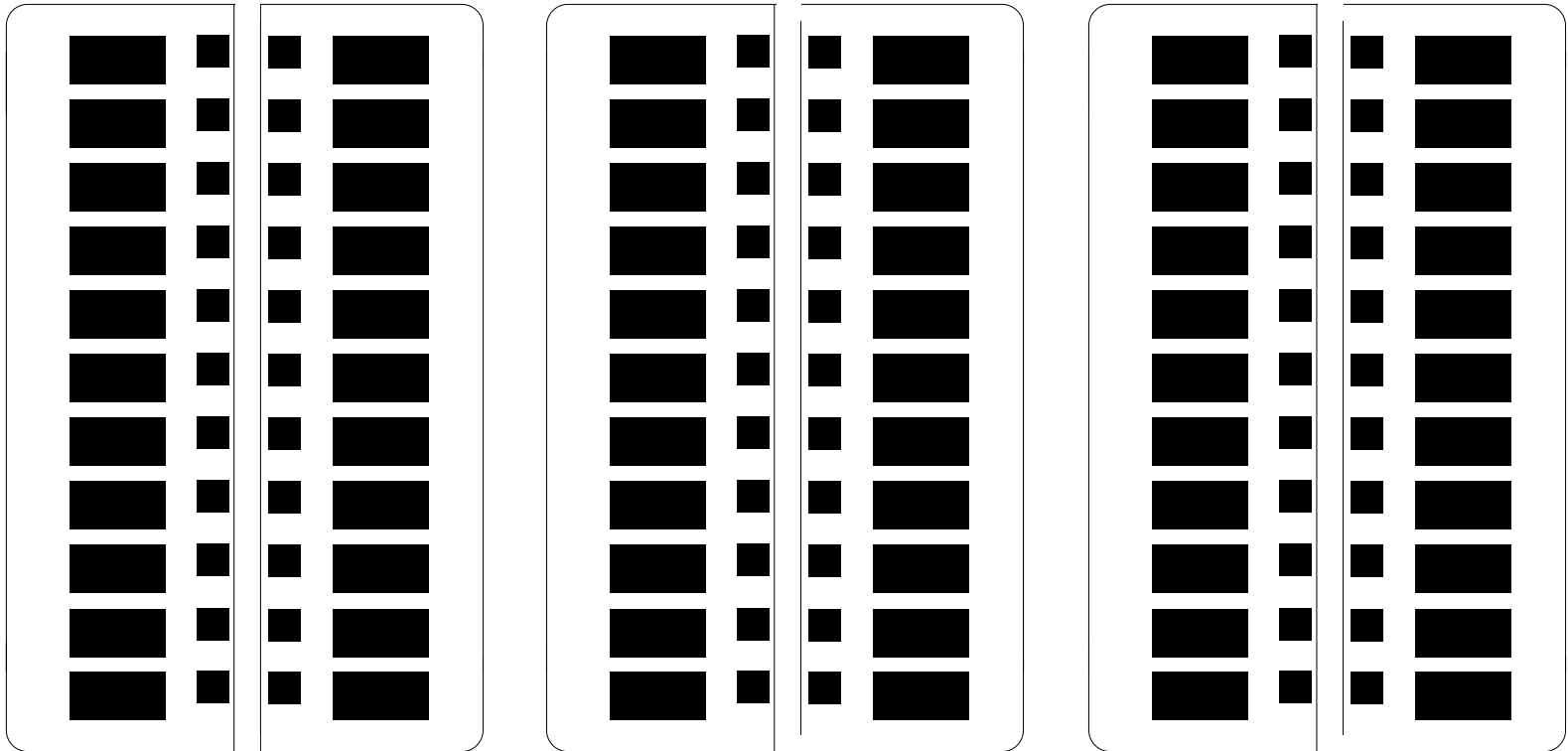


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# Challenge: Building Orientation for Infill Situations



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Jacobson Residence



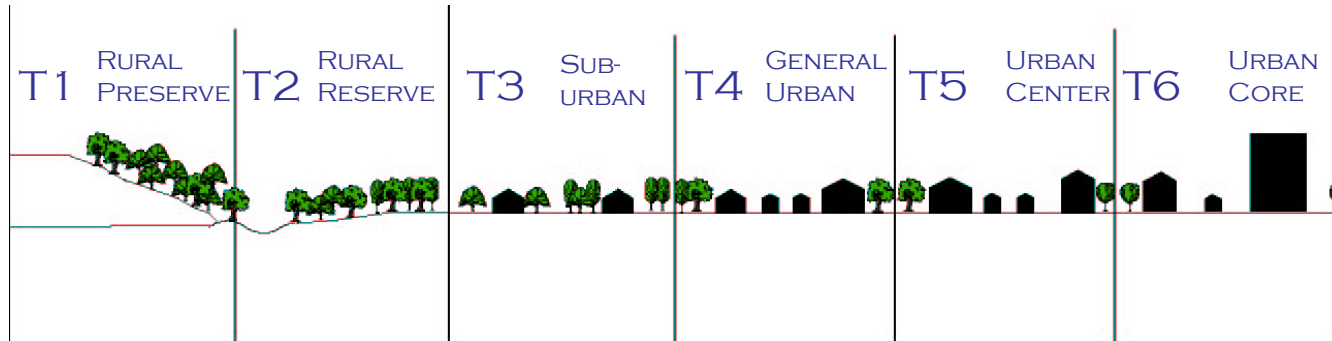
Sanctuary Place



Chicago Green Tech



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## Summary

Balance Priorities using Transect Concept

Apply Key Green Urbanist Principles

- Restore & Enhance Natural Hydrology
- Enhance Mobility & Connections
- Create Vibrant, Walkable, & Diverse Neighborhoods
- Build Green Buildings

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